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RUEHAK/AMEMBASSY ANKARA 0225
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RUEHMO/AMEMBASSY MOSCOW 0966
RUEHNE/AMEMBASSY NEW DELHI 0551
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SIPDIS
SENSITIVE

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TAGS: [EMIN](#) [EPET](#) [ENRG](#) [EINV](#) [EIND](#) [ETRD](#) [SENV](#) [SF](#)
SUBJECT: SOUTH AFRICAN COAL IS KING - AND WILL REMAIN SO

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[11](#). (SBU) Summary: South Africa is unique in its dependence on coal. The country is dependent on coal for over 90 percent of its electricity, almost 25 percent of its gasoline and diesel fuels, 90 percent of its iron and steel reduction, and large volumes of foreign exchange from exports. The government is committed to building more mega-coal-fired power plants, as a result of the recent postponement of plans for new nuclear power stations. At the same time, some South Africans are calling for greater implementation of clean coal technologies and control of carbon emissions. End Summary.

[12](#). (SBU) Minerals/Energy Officer and Specialist attended the Fossil Fuel Foundation Clean Coal Technologies Indaba March 11-12 in Johannesburg. The conference highlighted South Africa's growing dependence on coal, but also emphasized the need to implement clean coal technologies, such as carbon capture and storage. Coal is inevitably dominant in South Africa, given its 30-50 billion tons of proven reserves - the eighth largest in the world. South Africa ranked sixth in world coal production in 2007 at 247.7 million tons per year. The bulk of South Africa's coal is high ash requiring washing and processing for either power plant combustion or export. The country ranked sixth in the world for exports of 67.7 million tons in 2007, representing beneficiated, higher-grade coal mostly to Europe. Exports declined to 63 million tons in 2008 due to greater domestic purchases and infrastructure constraints. South Africa's power crisis of early 2008 has abated somewhat because of increased capacity, better management of existing power plants, and reduced power demand, but state power utility Eskom still faces inadequate reserve margins.

[13](#). (SBU) South Africa is constructing among the largest coal-fired, dry-cooled power plants in the world to satisfy its electricity supply needs. The 4,800 MW Medupi plant is under construction in Limpopo Province and will be completed over 2013-2015. The next plant in line is the 4,800 MW Kusile plant in Mpumalanga Province targeted for completion in 2016. The government cancelled the Eskom

tender for a new nuclear power station late in 2008. The government reaffirmed its commitment to building new nuclear power plants, but the tender cancellation will delay the program by at least two years. Therefore, the third and fourth mega-projects yet to be determined are now more likely to be coal -- located in coal-rich Mpumalanga or Limpopo Provinces.

¶4. (SBU) Eskom Coal Specialist Johan Dempers told the conference that South Africa will need to invest up to \$11 billion in coal mining by 2020 and dig at least forty new mines by that time to meet growing demand. Dempers said Eskom would itself require 200 million tons per year of coal (out of 374 million tons overall) to supply Qits needs by that time, including the four mega-stations. He called for greater work and collaboration on assessing South Africa's coal resource. Dempers told Energy Officer that Eskom had increased average power station coal stock-piles to 34 days, well above the squeezed stockpiles which contributed to last year's power crisis. He complained that Eskom was unable to cover its operating costs with current low prices, among the cheapest in the world even after the regulator approved a 30 percent increase last year. Wood Mackenzie Senior Analyst Xavier Prevost said port and rail capacity constraints are limiting transport and export of coal. Mpumalanga and Limpopo Provinces are not keeping up with road maintenance from increasing coal traffic on its roads. Dempers was also critical of the government for not facilitating the awarding of mineral rights and not adequately addressing skills shortages. He said a growing share of the coal supply will have to come from smaller reserve blocks mined by junior companies.

¶5. (SBU) Wits University Coal Researcher Lionel Falcon told the

PRETORIA 00000510 002 OF 002

conference that clean, efficient, safe, and economical coal technologies were crucial for South Africa, given its growing dependence on coal (over 90 percent and increasing). Use of water in water-scarce South Africa is a special concern, so many of South Africa's existing and new power plants are or will be dry-cooled. Many conference participants were optimistic about the potential for implementing carbon capture and storage (CCS) technology to mitigate carbon emissions, but IEA Clean Coal Center Managing Director John Topper said the technology is "not just around the corner". He said there was no commercial-sized, integrated CCS project yet in existence. Topper said existing CCS technology produced a huge energy penalty of about a 26 percent hit to efficiency, which is difficult to justify economically. South African SANERI researcher Tony Surridge said South Africa was engaged in compiling an atlas of potential CCS sites with the ambitious intention of creating a prototype by 2015.

¶6. (SBU) Other conference participants offered research and commercial examples of efficient combustion and beneficiation of coal in South Africa. For example, paper manufacturer Mondi is working with British Babcock on a new multi-fuel-fired bubbling fluidized bed project to increase energy efficiency. Eskom Researcher Priven Rajoo said South African power plants had been designed by northerners, even though southern hemisphere coals are different than those of the north. He said Eskom was carrying out research on improving combustion efficiency of South African low-grade coal. Underground coal gasification and coal bed methane are other methods under study for beneficiating South Africa's significant coal resources.

¶7. (SBU) COMMENT: South Africa is not unique in the world for a growing dependence on coal, but it is unique in the great extent that many of its airplanes fly on coal and many vehicles run on coal (from coal to liquid technology) -- and consumers' lights and industry's furnaces all run in effect on coal. South Africa's economy will remain overwhelmingly coal-based for the foreseeable future, despite conflicting commitments to diversify the country's energy mix and reduce its carbon footprint. The government's decision to delay new nuclear build will constrain South Africa's ability to be a leader on reducing carbon emissions.

La Lime